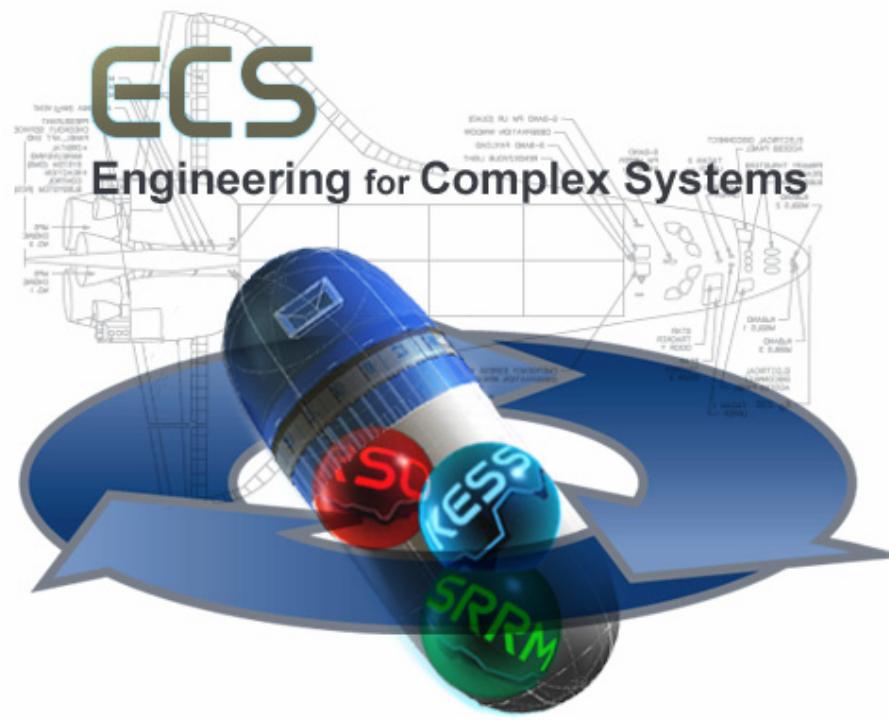


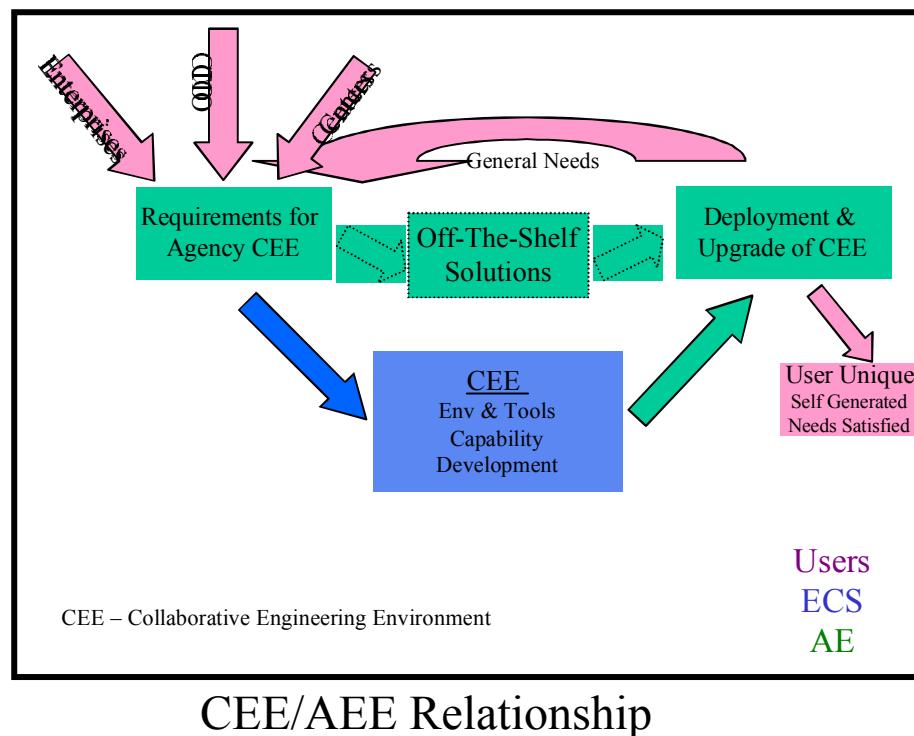
Collaborative Engineering Environment Selection Briefing



January 6, 2004

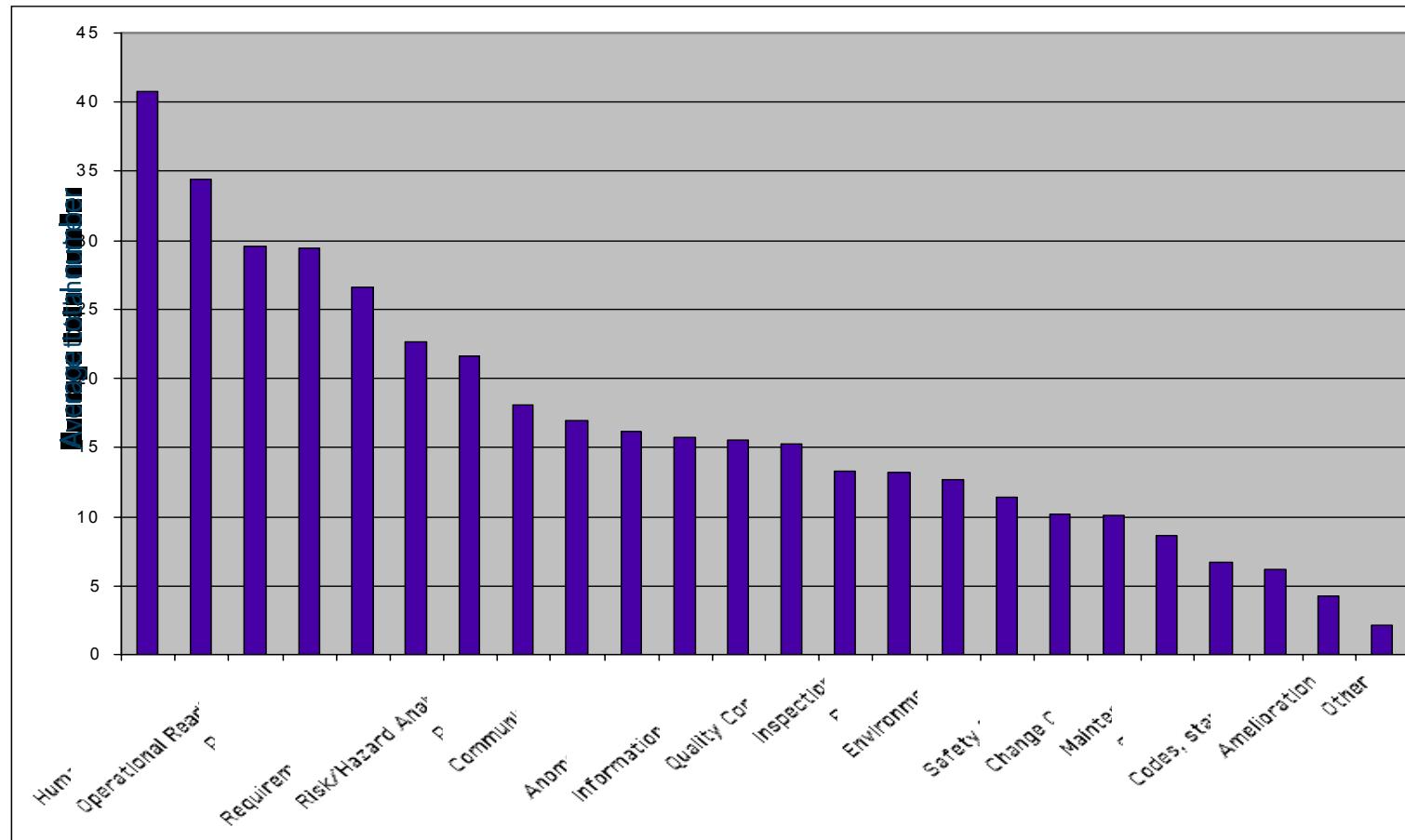
CEE Disposition: Background

The goal of the ECS CEE investments is to address current agency gaps in conducting collaborative engineering activities that cannot be addressed by commercial off-the-shelf products. The ECS CEE effort will be closely coordinated with the Chief Engineer's Office through the Advanced Engineering Environment (AEE) activities. Successful technologies developed with the ECS CEE investments are slated for implementation via the AEE program.



CEE Disposition: Selection Goals

The ECS program has been formulated and prioritized based on the results of mishap systems analysis studies. The chart below reflects relatively ranking causal factors that have contributed to NASA relevant mishaps. (The Y axis shows the number of times each category was indicated as a causal factor among the accident investigation board reports studied.) CEE proposals shall address at least one of these key risk drivers in their research objectives.



As shown on the graph, key areas for investigation include **Design Processes, Human Performance, Operational Readiness, Procedures, Management, Requirements Definition, and Risk and Hazard Analysis**. Future CEE solicitations will also incorporate AEE generated requirements gaps as they are identified.

CEE Disposition: Evaluation Criteria

Evaluation Critieria:

Phase I:

1. On Time
2. Complete Submission: resumes, proposal self-sufficient, all sections included & completed
3. Cost Range Reasonable
4. Task Lead NASA or JPL
5. Addresses Technical Domain in Solicitation

Phase II:

1. Management Plan Quality
2. Technical Proposal Quality
3. Cost Proposal Quality
4. Quality & Clarity of Deliverables

Phase III:

1. Topic Domain Balance
2. Gap Criticality (more than one proposal required for given topic area)
3. ECS/AEE Portfolio Balance Impact?

CEE Disposition

Selection Statistics:

Phase I Proposals: 70 (2 for FY05 have been deferred)

Phase II Proposals: 39

Phase III Proposals: 17

Final Down Select: 10

Below were the top 10 Proposals that had graduated from the Phase III selection criteria. The final downselect focused on Portfolio Balance within the overall budget cap of 2.330 Million dollars in FY04. Funding in FY05 will depend on FY04 performance, pending FY05 proposals, and new AEE technology gap requirements.

Rank	PI / Proposal	Proposal Title	Center	FY04 Funding	FY05 Funding	FY06 Funding	Reviewer1	Reviewer2
1	I. Turner (Turner-3)	Decision Management for Human-Agent Design Teams	ARC	440	486	496	Prusha	Wong
2	D. Maluf (Maluf-2)	Engineering Culture & Systems Analysis: With Digital Streams	ARC	338	319	0	Mederos	Wong
3	S. Waterbury (Waterbu	The Constrained Object Knowledge Rep.: Enabling Advanced	GSFC	415	464	479	Prusha	Wu
4	J. Penix (Penix-1)	Versatile Event Services for Collaborative Engineering Environr	ARC	361	365	370	Prusha	Wu
5	L. Wang (Lui-1)	Collaborative Procedure Validation System	JSC	334	421	207	Bergner	Prusha
6	L. Cooper (Cooper-1)	In Situ Science Spacecraft Interaction Modeling (ISSSIM)	JPL	400	400	400	Mederos	Wong
7	J. Penix (Penix-2)	Software Design Multiboard	ARC	360	348	351	Bergner	Gawdiak
8	T. Lavelle (Lavelle-1)	Collaborative Environment for the Analysis of Complex System	GRC	459	469	504	Bergner	Gawdiak
9	S. Wolfe & Keller (Wolfe	SoftwareOrganizer: A collaborative software engineering tool	ARC	494	486	497	Wong	Mederos
10	D. Maluf (Maluf-1)	Distributed Engineering Management Design & Ops	LaRC/AP	400	450	450	Mederos	Gawdiak

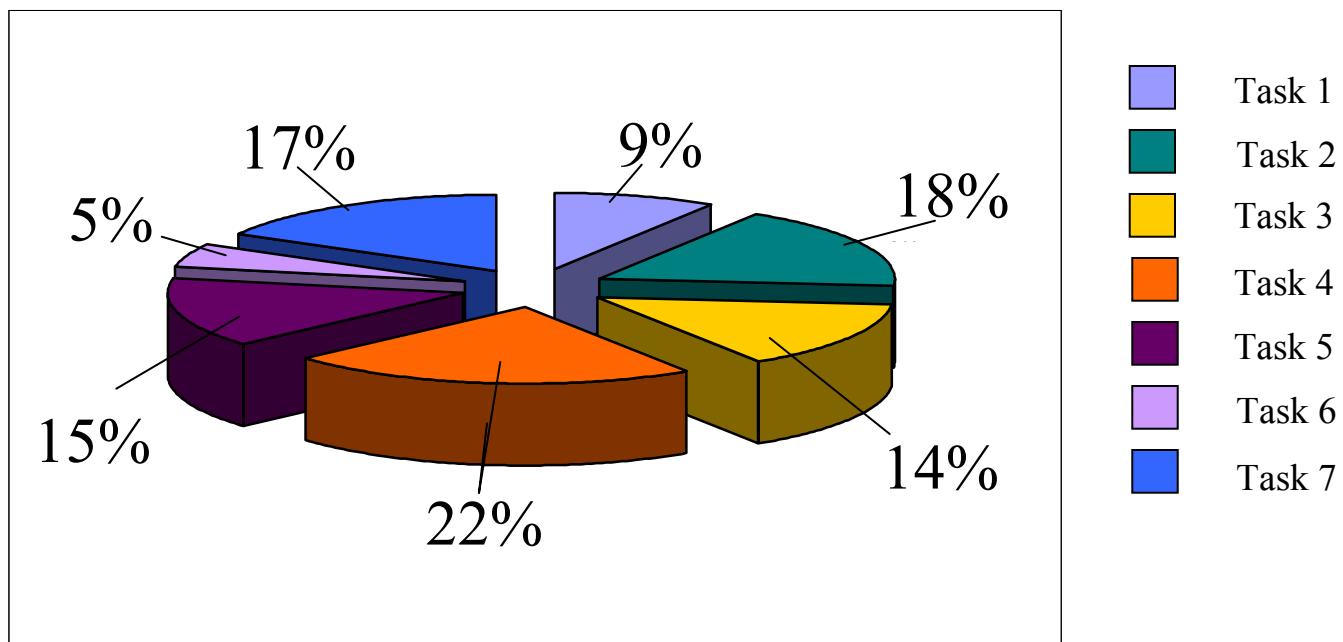
CEE Downselect

Rank	Proposal	Title	Funded	Funding Level K's	Funded vs Proposed	Funding Justifications
1	Tumer-3	Decision Management for Human-Agent Design Teams	Green	200	45.0%	Highest Ranked Proposal but High Management Workload Risks; Full funding possible in Year 2 based on Year 1 performance
2	Maluf-2	Engineering Culture & Systems Analysis: With Digital Streams Support	Red	0	0.0%	Portfolio Balance/Workload Decision vs Maluf-1
3	Waterbury-1	The Constrained Object Knowledge Rep.: Enabling Advanced CEEs	Green	400	96.4%	Highly Ranked Proposal & Strong ECS Program Leveraging
4	Penix-1	Versatile Event Services for Collaborative Engineering Environments	Red	0	0.0%	High Rank but Large Disagreement between Reviewers; Industry Gap Weakness
5	Lui-1	Collaborative Procedure Validation System	Green	330	99.0%	Key Risk Gap Area in CEE
6	Cooper-1 & Wheeler-2	In Situ Science Spacecraft Interaction Modeling & Tools and Work Environments for Effective Distributed Design Teams	Green	515	52.1%	Combining Prosals to improve Problem Domain Coverage & Technical Approach
7	Penix-2	Software Design Multiboard	Green	340	94.0%	Key Risk Gap Area in CEE/Design
8	Lavelle-1	Collaborative Environment for the Analysis of Complex Systems	Yellow	110	24.0%	Solid Objectives but questions on industry gaps. Minimum funding to prove feasibility and NASA appropriateness; Full funding possible in Year 2 based on Year 1 assessments
9	Wolf-1 & Keller	SoftwareOrganizer: A collaborative software engineering tool	Red	0	0.0%	Strong Proposal, but should be covered in baseline ECS funding and/or follow on Program
10	Maluf-1	Distributed Engineering Management Design & Ops	Green	390	98.0%	Key Management Design Risk Gap Area

CEE Disposition: PI Action Items

Final Task Selections:

1. **Tumer, ARC** - Decision Management for Human-Agent Design teams
2. **Waterbury, GSFC** - The Constrained Object Knowledge Representations Enabling Advanced CEE's.
3. **Wang, JSC** - Collaborative Procedure Validation System
4. **Cooper & Wheeler** - In Situ Science Spacecraft Interaction Modeling & Tools and Work Environments for Effective Distributed Design Teams
5. **Penix, ARC** - Software Design Multiboard
6. **Lavelle, GRC** - Collaborative Environment for the Analysis of Complex Systems
7. **Maluf, LaRC/ARC** - Distributed Engineering Management Design & Ops



CEE Disposition: PI Action Items

Group Action Items

- Review ECS Overview Package
- Attend CEE Initiation Telecon: January 12, 2004; 2pm EST;
Meet Me Number: (877) 927-0344,
Passcode: 291109
- Get ECS Program Management Tool Accounts and input revised task plans (as appropriate / instructed)

Specific Task Plan Instructions

- **Tumer -** Input a task plan into the ECS system at a 200K level
- **Waterbury -** Input a task plan into the ECS system at a 400K level
- **Wang -** Input a task plan into the ECS system at a 330K level
- **Cooper & Wheeler -** Integrate your proposals and provide a task plan into the ECS system at a 515K combined level
- **Penix -** Focus the proposal on Avionics/IVHM software and re-title the proposal to “Avionics Software Design Multiboard.” Emphasize the rapid & collaborative design of C&C and IVHM software during early conceptual design phases. Input a task plan into the ECS system at a 340K level
- **Lavelle -** Input a task plan into the ECS system at a 100K level
- **Maluf -** Re-name the task to “Collaborative Project Management Design Tools.” Emphasize the rapid & collaborative design of project management architectures during early conceptual design and the ability to use the tools throughout the mission lifecycle. Input a task plan into the ECS system at a 390K level.